Potamogetons of California.

J. W. Robbins.

1. P. natans
2. P. Claytonii – Sawmis Jr°. Org.
3. P. Lonchitis,
4. P. amplifolius – Org. – Sierra Val
5. P. gramineus – Ruby Valley
6. P. lucens. – Bot. Valley.
7. P. prolongus – Sierra Co.
8. P. perfoliatus – Org. Nw.
9. P. compressus – Org.
10. P. Vaginatus – Walkers Basin
11. P. pauciflorus. – S.F. (rainy) – Org. (Howell)
12. P. pusillus. ×

Pectinatus
Robbinsii
[illegible]
– Marinus

California Potamogetons
for Mr. Sereno Watson, Cambridge
with small book of unfinished descriptions

11 P. perfoliatus –
12 " prælongus –
13 " lucens –
14 " compressus –
15 " amplifolius –
16 " claytonii –
17 " natans –
18 " gramineus β –
19 " lonchites –
110 " ~~prolixus~~ marinus –
11 " ~~(pusillus)~~ pauciflorus –
112 " Robbinsii –
113 " pectinatus –
14 " Vaginatus –
~~15 " subfoliosus~~
15 pusillus –
16 rutilus.
17 pect. var laty –

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1. P. natans, L.

Stem "stout", simple or sparingly branched; floating leaves all long-petiolate, elliptical or ovate, sometimes cordate, obtuse but with a blunt point, 21–29-nerved; upper submersed leaves lanceolate, early perishing; lower ones early or late in the season grass-like & thickish, 3–7 long, barely 1" wide; upper stipules "free" very long, acute; peduncle about the thickness of the stem; "crowded" spikes "cylindrical, densely fruiting"; 1–2' long; upper portion of the embryo elliptically incurved & bending obliquely downwards. In ponds & ditches, mature in Aug. & Sept. the shallow water forms sometimes with no floating leaves & in deep water with no floating ones.

† the var. prodianus. Hook, is to be looked for, nearly submersed, in deep flowing water.

† recent fruit obliquely obovate, rugose when dry, the style terminating its face; outlet obscurely 3-keeled, its sides nearly always with a small deep pit in the middle;

P. Claytonii, Tuckn

Stems simple or branching above, compressed, rising sometimes to the height of 4½° from creeping root-stocks, which send out fibrous radicles; floating leaves numerous, often opposite, ~~varying from~~ 1–1½' long, 11–17 nerved, varying from oval to lanceolate or oblanceolate, mostly acute and tapering into a shortish flat petiole; the lower ones, which are ~~merely~~ petioles or dilated sheaths, are very numerous, 2-ranked, membranaceous and very delicate, ~~mostly~~ linear (2–5" & 1" 2½' wide), 5-nerved, the space enclosing the midrib coarsely cellular-reticulate; stipules obtuse; ~~stipes~~ spikes numerous, densely fruiting, equalling the thickness peduncle; fruit obliquely round-obovate, three keeled, nutlet not keeled, cochleate, distinctly impressed on the sides; embryo convolute to 1½ circles, the ab initio pointing obliquely upwards.

We have only seen but three
immature & imperfect Specimens
of this plant (from Saunder's Island
and elsewhere in Oregon)

P. lonchites, Tuckm.

Stems ~~often~~ rather slender, usually branching. Floating leaves ~~mostly~~ coriaceous though often thinnish, lance-oblong or long elliptical, usually acute, long-petiolate, 11–23-nerved; submersed ones membranaceous, pellucid, very long (3'–12' by 2"–1½" wide), lance-linear, fewer nerved and coarsely reticulated;† the long stipules often very acute or acuminate. ✱ Fruit obliquely obovate, when dry rugose and distinctly 3-keeled ~~when dry~~, the middle one winged above and sometimes with 3–5 shallow indentations, the rounded, slightly curved face tipped by the short style; denuded nutlet slightly impressed on the sides; embryo annular above, the apex pointing just above the base. Found mostly in ~~ponds~~ rivers, rarely in ponds, fruiting in Aug. & Sept.

✱ Spikes 1–2' long, densely fruiting on ~~[illegible]~~ incrassate peduncles ~~[illegible]~~ near ~~twice~~ their length

† Petioles?

P. amplifolium Jn

Stem stout, simple, of very variable length; floating leaves (in deep water often to a long, sometimes very long,) oval or lance-ovate, sometimes cordate, ~~many nerved~~ obtuse or abruptly acute, with numerous many nerves, equaling or exceeding their petioles; submersed ones often very large (reaching 7 by 2), membranaceous, lanceolate or rarely broad, obtuse at each end, much crowded, with broad undulations, ~~and~~ principal 6-8 nerves and coarsely reticulate, on short petioles; stipules very long, acuminate, ~~at~~ at first closely investing the stem; peduncles much thickened, longer than the elongated dense (finally?) spikes; fruit somewhat obliquely obovate, the back rounded & bluntly keeled; nutlet slightly impressed on the sides & with a rather sharp side keels, * Fr. maturing in Aug. & Sept.

We have but three specimens

* In shallow water sometimes with pro membranaceous leaves, and in deep water with no floating ones.

from our district of this noble American species, of which the normal form comes from Oregon and two narrow-leaved specimens, one each from Oregon and Sierra Valley, Cal., of which variety the mature fruit is desirable.

* The lowest radical leaf sometimes reduced almost to its midrib.

P. gramineus, L

Stems slender rising from running rootstocks which are sometimes enlarged, very branching below; floating leaves (often wanting) mostly thin, variable in form but with a short blunt point, 9–15 nerved; petiolate; submersed ones numerous, usually lanceolate or linear-lanceolate, narrowed below, minutely serrulate above, about 7 nerved on the stem & 3 nerved on the branches dichotomous branches, upper ones petiolate, lower ones sessile; stipules loose, usually obtuse; peduncles thickened upwards, bearing spikes about 1" long ripened fruit small wedish-obovate, scarcely keeled, style apical, mostly slightly impressed; embryo circularly convolute; the spur directed downwards

Fr. mature in Sept. Middle or flowing water

Of this very variable & extensively diffused species We have as yet from this district (Ruby Lake, Nevada, Watson) only

the following

Var. heterophyllus, Fries

This is the median and most common form, with lower leaves shorter than those of var. graminifolius Fries, lanceolate & more rigid.

* Stipules large, obtuse, often spreading

P. lucens, L

Stems rather thick, branching, sometimes very large; leaves all submerged or rarely the uppermost floating, petiolate or subsessile below oval or lanceolate often shining, numerous, mostly chartaceous or submembranaceous, usually acute or mucronate, crisped or sinuate at the margins; * spikes 1–2 long on longer thickened pedunculus; fruit rounded, compressed usually slightly keeled. Embryo above circularly incurved.

Fruit usually late in maturing.

Of this species, which has numerous forms and is uncertain as to its limits, we have on hand from this region but two specimens, each of which approaches the Var. Connecticutensis which has stem flexuous, leaves all submersed, short petiolate, lanceolate, long-mucronate, crisped on the margin & much twisted, not shining; fruit

obovate, distinctly keeled, nutlet thick and hard.

Of our ~~two~~ western forms No 1 (Mission Dolores, Bolander) has a straighter and more slender stem, leaves longer (sometimes 10') with flatter, not crisped, shining, more fewer nerves), sessile; stipules much spreading; fruit thicker, less keeled upper portion of embryo less transverse.

No 2, (California, Kellogg & Hasse) has its stem rather zigzag; leaves of a pale green, lance-oblong, short-petioled, obtuse with an abrupt, blunt point, but slightly waved or crisped, stipules erect, earlier, persisting; spike not compact, flowers in verticils; fruit wanting.

P. prolongus, Walpers.

White stem very long, flaccous, branching above: leaves of a light-green, lance-oblong or lanceolate, cuneate, half-clasping, (sometimes 10½ long) ~~obtuse with~~ obtuse with a boat-shaped cavity at the extremity, thence often splitting ~~more~~ when pressed flat; stipules white, long, persistent, obtuse; pedicles sometimes reaching 1½°, incrassate; spikes sparsely fruiting; achenium obliquely obovate, compressed, sharply keeled when dry; style facial: nutlet impressed: embryo curved about into an oval.

Abstlh in ponds also in deep water. Fruit (rarely found) ripening late.

We have as yet but a single specimen, with long crooked leaves, from Cal. by Mr. Lemmon, Sierra Co.

L

P. perfoliatus, L.

M Stems rising from running rootstocks, branching; leaves all submersed, membranous, orbicular, ovate or lanceolate from a cordate clasping base, mostly obtuse, often scabrous-serrulate; stipules ~~stem~~, early ~~perishing~~; spikes 1'-1½' long, ~~mostly~~ on short peduncles ~~rarely elongated~~ Fr. irregularly obovate, obtusely margined; embryo incurved in an oval. Fr. mature Sept. to Oct.

Var. lanceolatus. Robs & Sarger; leaves long & lanceolate (3' to sometimes 4½'), ~~from a cordate clasping base~~; usually acuminate & wavy, ~~pedunculus thickened~~.

We have from this district, none of the short leaved eastern and European forms, but they are still in some variety, Oregon furnishes from different localities, two spe-

cimens (probably from deep water), which have peduncles not incrassate 8' and 8½' long with spikes loosely flowered & verticillate, and Mr. Watson gathers in the Truckee River, Nevada, a plant, bearing a ~~contiguate~~ ~~dense~~-flowering spike, on a 1½' peduncle and leaves 2¾' by 5" and very obtuse.

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P. compressus, L. excl. Fries; Stem reaching 2°, branching, wing-flattened, frequently terminated by reproductive buds; leaves linear and grass-like (3 to 8' by 1½") abruptly pointed, with numerous (15–25) fine nerves, sessile, of a fine green; stipules (seen young) oblong, very obtuse; spikes cylindrical (12–15) flowered, shorter than the peduncle; fruit obliquely obovate, with a rather prominent keel, slightly toothed sides often ~~slightly~~ impressed; the face arching ~~the~~ and tipped by the style; embryo curved above to more than a circle, the upper portion lying transversely. In waters still and slow-flowing, ripening its fruit in Aug. and Sept. (P. zosteræfolius, Schumacher &c.)

We have from the Pacific states but a single fine, fruiting specimen furnished from Oregon by Mr. Hall.

P. Drageurdii, Durieu

Stem much flattened, 2-edged, somewhat winged & branching, some-
times rooting from the lower joints, 1–3" long; leaves all submersed, linear, acute with a mucronate tip, alternate to the subpetiolate base, three or sometimes five-nerved, the middle composite below of five nerves, about 2" long by 1" wide; stipules (sometimes 8" long) obtuse when young but finishing into bristles with their insistent sheaves becoming setose; peduncles less than ½' long clavate, compressed; spikes few, capitate, 2–4 flowered; fruit (rare) reddish, compressed, with a winged and toothed keel and angled face, upper portion of embryo circularly incurved and directed transversely below its middle. Aug.

Rec'd only from Walker's basin, Cal. thro' Dr. Rothrock; its leaves usually 5-nerved and the peduncles longer than in the eastern forms. No fruit.

P. paucifloras, Ph.

stems slender, sometimes thread-like compressed, very branching, 8' to about 20' high; leaves narrow-linear, 1-2' long & seldom 1/2" wide, acute, obscurely 3-nerved; stipules obtuse, ~~spinescent~~ tapering to an awl-shaped setaceous point, ~~2-flowered~~, peduncles short rather club-shaped, bearing capitate spikes of 2-3 flowers; fruit roundish lenticular, with it's back more or less crested & dentate; embryo annularly incurved above.

Fruit maturing in Aug. and Sept.

Two forms are before us from Cal. and Oregon, of which the former, from near San Francisco, (Dr. Vasey, 1876) is very slender, nearly simple, with very few, narrow leaves, longer peduncles and smaller fruit scarcely winged. That from Sauvie's island, Oregon, (Mr. Howell, 1879) has a dichotomous, very branching stem, with numerous, broader leaves above and fruit more winged & dentate

A very variable species, approaching

(perhaps too nearly for separation) to
P. Niagarensis by one extreme and
P. pusillus by the opposite,—the last
mentioned var.

P. pusillus, L.

Stem slender, compressed or nearly cylindrical, branching; leaves linear, very variable in width, obtuse and mucronate or acute, sessile, 1–5 nerved, bigland-dulate at the base; stipules mostly obtuse, spikes ~~capitate or short interrupted~~ interrupted or often capitate, on peduncles mostly long, subcompressed and thickened, 2–8 flowered; fruit obliquely broad-elliptical, scarcely or very bluntly keeled; upper portion circularly incurved, with its apex directed variously downward. Pools and ditches. Fruit maturing from June to August.

Our district has thus far furnished but few forms of this very variable genus, of which the more common is the

P. var. vulgaris, Fries. Slender, very branching; leaves narrow-linear, about ⅛" wide, often obtuse, 3-nerved. Very rarely with a few floating, lanceolate, 5-nerved leaves.

John Johnson

Ellie Johnson

Lizzie Johnson

Mary McDonald

gs 'q 17

1 2 3 4 5 6 2 8 9 10 11 12

Par. tenuissimus, Mert. & Koch. Stem very slender and much branched, leaves very narrow, scarcely more than 1/2" acute or cuspidate, obsoletely 3-nerved

My "40th parallel" specimens
A portion of those noticed in Report

8-12-8 P. natans
9-20-10 P. lonchites
8-12-4 P. gramin. B heterophy
Camp 11 (Baily) P. ~~lum~~ perf. B. lanc.
8-12-5 P. marinus var? occid.
Aug 1868 (Baily) P. prat. latif
8-13-6 P. pusillus B. vulgar &
7-1-8 " " " subvar int
8-14-3 P. marinus var occid.

4.2 of the well-matured fruit of the Utah var. occidentalis of P. marinus equal in weight 25 of the small form of P. marinus of Europe,—P. filiformis of Pers., and only 8 of P. pectinatus from Nantucket.

Disease of Mr. Thomas Scott

or An error corrected.

We learn on conversing with the physicians who made the examination in the case of the late Mr. Scott that we had been misinformed in respect to some points in the case. There was no reason for considering that the small tumor enclosing and obstructing the esophagus was of a cancerous nature. In fact the character of the fleshy mass itself and the internal ulceration, which had made a small passage into the trachea, indicated the contrary. So also did the two small collections of matter & the small tumor about the point of the stricture. There was moreover no disease whatever of either of the orifices of the stomach, which are common seats of cancerous formations. The lungs were extensively adherent to the walls of the chest & evidently diseased in structure, but were free from tubercles.

6393 P. Clayt.

(1) Soda Springs. ~~P.~~ pusil. var. Tenn &
subvar. integrifolia
(2) 1783 " " P. gram.? or Clay
1978 recurvans H
2471 [illegible] ?
1821 pect. Blatt.